

**REMARKS**

Claims 1-37 are pending herein, with Claims 1, 11, 27, and 28 being independent claims. All claims stand rejected. Responsive to each paragraph of the Office Action, the Applicant has the following remarks:

Claims 1-5, 9, and 28-31 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,729,931 to Grimble. In response to the previous Office Action, the Applicant pointed out that Grimble does not show "a fuel cell stack having a manifold wherein heat is exchanged between a fuel fluid and an oxidant fluid." Rather, Grimble shows nothing more than the typical operation of a fuel cell in that the fuel and the oxidant react along the cell wall 5 in a conventional fashion. In response, the Examiner asserted that "[t]he cell wall (5) is to at least some extent thermally conductive. Therefore, the oxidant and fuel fluids will exchange heat through the cell wall (5), and limitations of Applicant's claims are met."

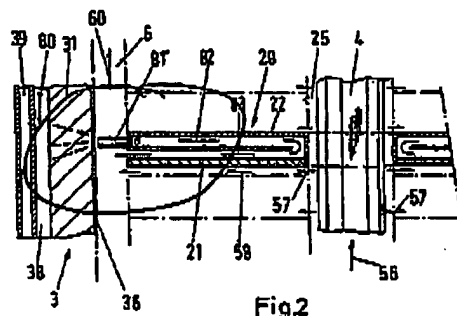
Although the Applicant asserts that the assumption of thermal conductivity along cell wall (5) is not inherent in the disclosure, the Applicant has amended the claim to indicate that the manifold is "non-reactive". Such a limitation clearly overcomes the disclosure of Grimble. The Applicant thus asserts that independent Claim 1, and the dependent claims thereon, are patentable.

Likewise, with respect to independent Claim 28, the Applicant has amended the claim to indicate that the first heat exchange is done in a non-reactive manner. The Applicant thus asserts that the amendment overcomes the rejection of Claim 28 and the dependent claims thereon.

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Claims 11-16, 20, and 21 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,303,243 to Schuler. In response to the last Office Action, the Applicant amended independent Claim 11 to specify that the first fluid is delivered to the first flow orifice from the first interior cavity and that the second fluid is delivered to the second flow orifice from the second interior cavity. The Applicant noted that no fluid is delivered from what is described as the "second interior cavity (6)" of Schuler. Rather, element 6 is the afterburner chamber. Instead, the fluid is delivered via a supply line (81') from outside the sleeve, *i.e.*, outside the manifold. In response, the Examiner states that "fluid is clearly delivered from second interior cavity. The cavity could not accept an input of fluid without a fluid flow from the cavity."

The Applicant continues to traverse the rejection. The Examiner previously defined the first interior cavity to be element 25 and the second interior cavity to be element 6. As is shown below, the second fluid 82 is not delivered to what the Examiner apparently is calling the first flow orifice 22 from the chamber 6. Rather, air 82 is fed through the supply line 81 that passes *through* the afterburner chamber 6 for heating. In other words, air is not fed into the cell 20 from the afterburner chamber 6. Rather, reacted air mixes with reacted fuel within the cell 20 and exits via the afterburner chamber 6:



Further, the claim specifically recites that the first and second fluids are to be kept separate. The fluids in Schuler, however, are mixed within the afterburner chamber 6. The Applicant thus asserts that Claim 11, and the dependent claims thereon, are patentable over the cited reference.

The Applicant further traverses the rejection of dependent Claim 12 concerning a feed tube disposed within the second interior cavity that provides fluid communication between the first interior cavity and the first flow orifice. As is shown in Fig. 2, the supply line 81' leads directly to the interconnect 22 as opposed to the first interior cavity.

The Applicant further traverses the rejection of dependent Claims 13 and 14 concerning a porous flow distributor. The cited reference apparently is silent on such.

The Applicant further traverses the rejection of dependent Claim 21 concerning the first interior cavity receiving the fuel and the second interior cavity receiving an oxidant. As shown in Fig. 2, there is no incoming fluid flow from the "second chamber."

Claims 6, 10, 27, and 33-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Grimble in view of U.S. Patent Application No. US2003/0022050 to Barton, et al. In response to the last Office Action, the Applicant traversed the rejection of dependent Claim 6 concerning a fuel storage tank in communication with a fuel vaporizer, a pressure relief valve, and an airflow delivery device for the reasons described above with respect to Claim 1 and because the storage tank is not in fluid communication with a fuel vaporizer. In response, the Examiner states that "[a]lthough this arrangement may not be specifically shown in the Grimble patent, it is clear that, since no other source of fuel is present, the fuel storage tank and the fuel vaporizer must be in fluid communication in order for the fuel to be vaporized at the vaporizer."

The Applicant continues to traverse the rejection. Specifically, the Applicant asserts that the Examiner has not established that the elements recited in Claim 6 are inherently shown in the reference. As stated in the MPEP, "[t]he fact that a certain result or characteristic may be present in the prior art is not sufficient to establish the inherency of that result or characteristic." MPEP §2112. Rather, the Applicant requests a reference showing the claimed elements or allowance of the claim. The Applicant likewise traverses the rejection of Claims 33-35 for the same reasons.

With respect to independent Claim 27, the Applicant traverses the rejection for the same reasons described above with respect to Claim 6. The Applicant asserts that the Examiner has not established that the reference inherently shows the elements of the claim and requests a reference showing the claimed elements.

Claims 7, 8, 36, and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Grimble in view of U.S. Patent No. 4,087,076 to Morrow, Jr., et al. In response to the last Office Action, the Applicant traversed the rejection for the reasons given above with respect to Claim 1 and 28 and further traversed the rejection of dependent Claim 7 on the grounds that it is not clear how the open apertures of Grimble could accommodate the use of a vacuum chamber as is shown in Morrow. The Applicant traversed the rejection of Claim 36 for the same reasons. In response, the Examiner states that the test of obviousness is not whether the features of a secondary reference may be bodily incorporated in the structure of the primary reference. Rather, the Examiner stated the test is what the combined teaching of the references would have suggested to those of ordinary skill in the art.

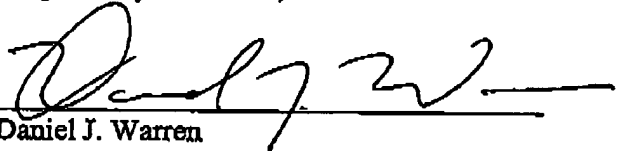
The Applicant continues to traverse the rejection for the reasons states above with respect to Claims 1 and 28 and on the grounds that there is no suggestion in the references to combine the open apertures of Grimble with the vacuum chamber of Morrow. MPEP §2143.01 clearly states that the proposed modifications cannot render the prior art unsatisfactory for its intended purpose. Specifically, "if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the purposed modification." Likewise, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima face* obvious." The Applicant thus submits that the claims are patentable over the cited references.

The Office Action did not discuss Claims 17-19 and 22-27. The Applicant continues to traverse the rejection of the claims for the reasons described above.

**CONCLUSION**

The Applicant believes it has responded to each matter raised in the Office Action. Allowance of all claims is respectfully solicited. Any questions maybe directed to the undersigned at 404.853.8028.

Respectfully submitted,



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